

**Department of Conservation
California Abandoned Mine Lands Forum
801 K Street
Sacramento, CA 95814**

**May 18, 2005
Meeting Notes**

Facilitator and Meeting Summary: Mary Kay Lahay, Lahay & Associates

Attendees:

1. Sandra Lunceford, Techlaw, Inc.	9. Janine Chayton, USFS
2. Amy Romero, Techlaw, Inc.	10. Greg Schimke, USFS, Tahoe
3. David Buck, Placer County Environmental Health Services	11. Brad Shipley, USFS, Tahoe
4. Tracy Gidel, Nevada County Environmental Health Department	12. Rick Weaver, USFS, Tahoe
5. Dana Wynniger, Placer County Environmental Health Services	13. Laurie Scribe, RWQCB, Region 6
6. Alberto Pujol, GEI Consultants, Inc.	14. Kyle Leach, County of Nevada
7. Randy Adams, Department of Toxic Substance Control	15. Sarah Reeves, Department of Conservation
8. Eugene Mullenmeister, Shaw Environmental, Inc.	

Agenda:

- I. Welcome, Introductions and Agenda Review
- II. Presentation: Spenceville Mine Closure, Alberto Pujol, GEI Consultants
- III. Forum Charter Discussion
- IV. Presentation: Border Zone Issues Relating to Mines, Tracy Gidel, Nevada County Department of Environmental Health
- V. Legal Liability Survey
- VI. Project Announcements / Updates
- VII. Next Meeting

Meeting:

I. Welcome, Introductions and Agenda Review

Sarah Reeves kicked off the meeting and welcomed AML Forum attendees. Mary Kay Lahay, the group's new facilitator, introduced herself and asked for a quick introduction (name/agency) from each of the participants as well, since many folks were first time attendees. Participants also circulated the attendance sheet and again submitted business cards to Sarah to help update the AML master list records. The agenda was reviewed and no changes were made. Lahay then introduced the first presenter.

Spenceville Mine Closure Presentation by Alberto Pujol from GEI Consultants.

Mine Introduction: Alberto introduced himself and asked how many folks in the room had ever been to Spenceville site. Two had and he encouraged the rest of us to visit, as it is a terrific wilderness and recreation area. Spenceville is located east of Beale Air Force base in Nevada County. It includes over 11,000 acres in both Yuba and Nevada Counties, and contains abundant wildlife. Common activities include: hiking, equestrian, mountain biking, fishing and hunting.

Mine History: The Spenceville Copper Mine site was discovered in 1863. Underground mining was used first, and then operations continued as open pit mining until copper prices collapsed in 1887. For the next ten years, the red hematite tailings was milled for paint pigment and tailings were leached for copper cement. Unfortunately, the famous “Spenceville red” paint corroded nails and many barns fell down before the paint pigment use was discontinued.

The pit was dewatered in 1897 and pyrite was mined for sulfuric acid, until fires razed the mine properties between 1915 and 1917 and all work ceased. The town of Spenceville survived on agriculture until WWII at which time the military acquired the property in 1941 for a training ground. Finally, in 1962, the Spenceville Wildlife Area was created via a land transfer from the U.S. Government to the California Department of Fish and Game, who still manage the area.

Previous Studies of Mine Condition: Studies conducted at the site in 1984 revealed the following conditions: The former open mine pit had filled with acidic water from mine waste runoff and groundwater inflow with a typical pH range of 2.2 – 2.8. The copper concentration range was 30 – 230 ppm in a pond surface area of 0.5 acres or 6M gallons. The pit overflowed seasonally into the nearby creeks of Dry Creek and Little Dry Creek. There were about 11,000 cy of jarosite, yellow mine waste rock and overburden material that had been stockpiled. In addition, hematite tailings, a byproduct of ore roasting, was found along with red-black mine waste and residual product from copper roasting. Quantities of this material were approximately 31,000 cy.

Little Dry Creek, east of and down gradient from the site was also contaminated. Groundwater seeps discharged contaminated water from the pond into the creek, as did heavy rain overflow from the pit. Metal salts had accumulated along the stream while the stream water itself remained relatively unaffected. Finally, the pit presented various physical hazards. The pit was approximately 60 feet deep, the walls were steep, and old vertical shafts were a fall hazard, with egress from them very difficult. The Army did a ‘first pass’ ordinance removal, but gave no assurance that more ordinances wouldn’t be found later. More was found, albeit none of it ‘live.’

Clean-up Initiated: The RWQCB notified Dept. of Fish and Game (DFG) that the abandoned Spenceville Mine is regulated by the Toxic Pits Cleanup Act (TCPA, 1987). DFG prepared a hydrologic assessment report to obtain an exemption under TCPA. This exemption was granted and DFG monitored water quality (1990) while the Department of Conservation (DOC) prepared a remediation and reclamation plan for the mine (1995). In 2000, a joint Walker & Associates / GEI team was awarded the Mine Closure contract. Work was completed in 2001.

Mine Closure Team: Besides the Walker and Associates and GEI team, the following firms helped with various parts of the project:

1. Construction Remediation Engineering, Inc. (Construction)
2. Resource Technology Group, Inc. (Treatment plant design and operation)
3. Greystone Environmental Consultants (Permitting)
4. Dr. Vic Claassen (Soil/revegetation specialist)
5. Bitterroot Restoration (Revegetation)
6. UXB International Inc. (Unexploded Ordnance Remediation)
7. Exponent Inc. (Human Health and Ecological Risk Assessments)

Mine Closure Objectives:

1. Fill Open Pit to eliminate public safety hazard posed by deep acidic pond.
2. Reduce discharges of mine-impacted, acidic, metal laden water to surface waters
3. Reduce impacts to groundwater quality by reducing generation of acidic, metal laden water from mine waste.
4. Return mine site to stable conditions suitable for open space land use
5. Minimize closure costs.
6. Minimize post-closure maintenance and monitoring activities and costs.
7. Comply with applicable regulations

Project Methodology and Implementation: The team completed further study and evaluated two alternatives against the above objectives. Alternative 2 involving an onsite landfill was abandoned due to increased cost, especially post-remediation maintenance. Alternative 1, which was to treat the mine waste and place it in the pit, was chosen. The final plan included these work elements:

1. Dewater the Mine Pit and treat the pit water in on-site neutralization plant.
2. Discharge treatment effluent to nearby land application fields.
3. Haul sludge from treatment plant to off-site landfill.
4. Clean Little Dry Creek stream channel with pressure washer
5. Treat mine waste with liming agent.
6. Place and compact treated mine waste in dewatered pit and in a fill on top of the pit.
7. Regrade the slopes of excavated surfaces, scarify and amend soil with compost and fertilizer.
8. Import clean soil from local borrow areas and place the soil as a cover layer over the mine site.
9. Place drainage and erosion control features to stabilize resoiled substrate.
10. Revegetate the site with native species collected from the local area.
11. Install additional monitoring wells for long-term monitoring.

Various necessary permits were obtained. The project began in November 2000. Earthwork was substantially completed by December 2001. Revegetation work continued in 2002. Alberto showed the group a series of photos that showed the before, during and after picture of the remediation work completed here.

Workers found that the water quality inside the pit was chemically stratified. So CRE set up three different pumps at different depths to mix all the water to a relatively uniform chemistry. That way the treatment process only had to deal with one chemistry scenario. The water treatment facility produced a sludge that was stored on a pad with a leachate collection system. The sludge was later shipped to a Class 1 landfill (Kettleman Hills). The treated water was fed into an irrigation system that was built as part of the project to comply with specific irrigation time limitations in the area.

Engineers were also worried about high wall failure in the pit due to rapid drainage of the water, so they set up several preventive measures. Once the pond was drained, several vehicles, rubble and old mine workings were found. The old mine workings were closed by a mixture of bentonite and limestone, and a ramp was built to gain access to the pit floor. The pit was then backfilled with a conveyor blended mixture of tailings and a lime byproduct from the processing of sugar beets. The blended material was layered and compacted in small lifts (as engineered fill) to minimize future subsidence.

Once the pit was backfilled the area was contoured to reduce erosion potential. After the cover soil was in place, contractors worked on the stream restoration. Evaporative salts were removed from the original creek channel via steam washing. As a last step, the creek channel was relocated east to its original location. The dramatic comparison of final before and after photos Alberto shared told the full story of this project.

***Note:** For more information contact Alberto Pujol at GEI Consultants at (510) 350-2908 or email him at apujol@geiconsultants.com*

Questions and Answers:

Q: Why was the exemption needed if the project was cleared under the TPCA?

A: An earlier one had expired as DOC did the closure plan earlier but there was a delay in funding to initiate the work.

Q: Was an EIR done and who was the lead agency?

A: The CEQA process was followed and a mitigated negative declaration was completed. The mitigation was primarily for construction related impacts. Fish and Game was lead agency on CEQA.

Q: Was a PDSA done? (Public Health & Safety Assessment)

A: Yes, conducted by Exponent, Inc. under subcontract to Walker and Associates.

Q: Why were materials blended on conveyor vs. by the heavy equipment once in the pit?

A: The requirement was to blend tailings at a specific dosage and we felt doing that on the conveyors gave us better performance to this requirement.

Q: The site could be within the inundation zone for the proposed Waldo Reservoir. How did you address this?

A: The potential interaction between the site and Waldo Reservoir would need to be addressed as part of the reservoir studies if the reservoir ever moves forward.

Q: What kinds of metals were in on site?

A: Copper and zinc primarily and a bit of arsenic in the hematite tailings. The later was *not similar* in level or volume to the red waste found at Iron Mt.

Q: Did the Water Board classify waste materials?

A: Yes, the tailings were classified as inert after treatment.

Q: Was there a lot of study of the native plants of this site.

A: Yes, Vic Claassen performed a detailed study of the native plants of the area. Bitterroot was the revegetation subcontractor for this project.

Q: What was the final project cost?

A: In the range of 5 to 10 million.

Q: Is there any long-term monitoring of the site?

A: There was a monitoring plan prepared by Walker and Associates for quarterly monitoring. I don't know what the status of this.

Q: Did you pay for the sugar beet byproduct?

A: It was either free or very low cost.

III. Forum Charter Discussion

Since many participants had not attended the last meeting, Mary Kay Lahay summarized that this agenda item was about a review of this group's primary mission, what it wants to accomplish in the next year and how to possibly change the format (has drifted over time to straight presentations) in a way that allows more collaborative group problem-solving and planning vs. continuing with solely information presentations. She asked the group to brainstorm first the key purposes they wanted this Forum to serve and the following ideas surfaced:

1. Share information
2. Identify areas of common concern
3. Group discussions of other ways to address them, "air and advise"
4. Present Lessons Learned from technical problems / projects – i.e. problems and solutions.
5. Memorialize the discussions about the above topics on the Internet.

Lahay then asked the group for any initial ideas about ways to improve the group's achievement of the above purposes. These ideas surfaced in reply:

:

1. Add contacts information to minutes or directly to the website.
2. Put the actual presentations themselves or links to them or their firms on the website.
3. Create a plan how to get counties more involved in the Forum (some said they expected DOC to create this plan and propose it to the Forum members)

(Someone else mentioned that cost-sharing strategies could be attractive to the Counties this might get them here?)

4. Go through Directors and County CUPA's and start promoting our meetings better.
5. Do same with RCRC – (one was here today and didn't know the group existed before.)

6. Consider a Forum objective to standardize a process for ALL Counties to use to assess mine impacts.
7. Use this group to agree to a list of prioritized state projects to fund; so that this group is prepared to speak to motivated funders with one united voice identifying priority projects to fund vs. multiple messages from various individual agency perspectives.
8. Consider video or teleconferenced broadcast for some meetings in order to involve folks from the more remote locations who do not have funds to get to these meetings
9. Do legislative updates at this meeting.
10. Identify funding and cost sharing sources

Lahay agreed to work with DOC staff to create a first draft Charter based on this input and present some final models for future meetings at the next meeting for final decisions. Sarah Reeves took the action to begin implementing some of the Website suggestions of today.

IV. Presentation: Border Zone Issues Relating to Mines by Tracy Gidel, Nevada County Department of Environmental Health.

This presentation was actually partly about collective problem-solving, a desired shift in focus for the entire Forum approach...Tracy Gidel opened by stating three reasons he was there:

1. To introduce the issue of hazardous waste and border zone property as covered in CH&SC Section 25221 with relationship to mining activity. To share the types and quality of information he has on former mining sites and the kind of additional data he still needs. To review with the group the use of this information and the possibility of other sources of more accurate information. **California Health & Safety Code Section 25221:**

Tracy then shared the current statute language and illustrated the difficulty in consistent interpretation of the statute using several examples. The statute reads: “(a) Any person as owner, lessor, or lessee who (1) knows, or has probable cause to believe, that a significant disposal of hazardous waste has occurred on, under, or into the land which he or she owns or leases or that the land is within 2,000 feet of a significant disposal of hazardous waste, and (2) intends to construct or allow the construction on that land of a building or structure to be used for a purpose which is described in subdivision (b) of Section 25232 within one year, shall apply to the department prior to construction for a determination as to whether the land should be designated a hazardous waste property or a border zone property pursuant to Section 25229.”

Tracy shared that the intent of the law is to limit human exposure to hazardous materials/waste by monitoring development in close proximity to impacted areas. This is accomplished by controlling the development of facilities with the proposed occupancies listed below, on hazardous waste property or within as much as 2000’ of a hazardous waste property, ie. “border zone property.” Many parties are coming directly to Tracy’s office vs. going through Dept. of Toxic Waste Control. Residences

- Hospitals
- Schools for persons under 21 years of age
- Day Care for children
- Any permanently occupied human habitation except those used for industrial purposes

How Big is the Problem?: Tracy stated that over the past 15 years there were 7352 new homes built in Nevada County. This equates to \$876,861,949 worth of residential development. Presently he has three lists of information on mining sites in Nevada County with over 3000

entries. Tracy believes other counties have the same issue. He shared several slides showing only a partial graphic plotting of hazardous sites that fall within a 2000-foot radius of the human health and safety buffers between hazardous waste and human presence.

Tracy stated his concern that compliance with this statute could involve a substantial increased cost to development as well as a significant increase in review time for permit processing. He then walked the group through several recent examples of owners applying for either a residential building permit or parcel map. The key question is: Is it a hazardous waste property or a border zone property? In order to answer the question, you must first do a records search to determine that there is a proximate mine, and how far away from the project property it is. Tracy explained that here the problem really begins, as often the data available is insufficient, there is no history or status information on the mine (e.g. type & extent of the mining operation).

Step #1. Phase One assessment to determine the type and extent of the mining operation.

Step #2. Possibly a Phase Two assessment to determine if there is hazardous waste on the mine site property that would require further review.

Step #3. Request DTSC for determination as to whether the land should be designated a hazardous waste property or a border zone property pursuant to Section 25229.

Tracy spent his remaining time in discussion with the group in two areas: what stakeholders would have a vested interest or concern about this problem? The idea here is to plan how to inform these stakeholders and leverage their assistance (financial or otherwise) in dealing with the potential workload impact border zone issues and compliance with Section 25229 by all California Counties. The group decided that while the California Realty Board and others are clearly relevant stakeholders, they need to get better definitions for key legal terms used in the statute before taking steps to educate others on the issues.

Randy Adams from DTSC agreed to contact his colleagues *Steve Becker and Sandy at DTSC by to ask them to provide more definite legal interpretation of statute language at the Forum's August meeting. The questions the group wants answered are: (1) What is "hazardous waste" for this code section? (2) What is a 'border zone'? and (3) What is "probable cause to believe?"*

The second problem-solving discussion centered around the need for more and better (up-to-date and detailed) information on mines to be used to comply with this statute. The group provided Tracy additional sources of mine information. The following information sources were mentioned but no further problem solving on data quality was conducted at this time:

- *Nevada Historical Society Library – indexed by mine name*
- *CERES*
- *DocuShare – he can add electronic data e.g. individual APN numbers of all sites that fall within perimeters.*
- *Ask realtors what their sources of information are.*
- *DOC has several data base sources: PAMP data set done with Water Board (100K production and lists potential contamination. (2) TOMS Point data set (typographically occurring mine symbols); (3) Forest Service data managed by DOC – limited info about private land on this database; (4) MAS/MILS, the old Bureau of Mines dataset.*
- *BLM's LR 2000 data base*

- *Title Companies?*
- *Steve and Sandy at DTSC are good contacts also*

Note: For more info, contact Tracy Gidel at (530) 265-1449 or tracy.gidel@co.nevada.ca.us

- V. Legal Liability Survey: a participant attending the previous meeting requested this agenda item** Lahay asked this group who had read the document provided by attorney Jennifer Soloway at an earlier meeting. Few had and when asked, few indicated that realistically they would. Therefore, Lahay asked the group to discuss and decide whether they wanted to pursue the ‘legal liability’ aspect of mine reclamation work. The group discussed the topic briefly, including asking for comments from the attorney present at this meeting. The group declined future agenda items on this topic at this time, in favor of problems they think are more tangible and manageable in scope, i.e. problems the group has some control over. (see proposed agenda for next meeting.)

VI. Project Updates / Announcements

- Given the remaining time left on the meeting agenda, we did not do announcements.

VII. Next Meeting

The **next meeting date was tentatively set for August 24th** from 9 a.m. to noon at DOC. The group brainstormed these agenda items for the next meeting:

- 1) Presentation of Border zone and HHSC 25221 legal terms definition by DTSC personnel and group decision on next steps to pursue on stakeholder notification and problem resolution.
- 2) Should we look at developing a fact sheet on border zones as a group for DTSC
- 3) Border zone process and alternatives?
- 4) First draft charter presented for review and feedback; final group decision on potential models for future “action-oriented” meeting process and update by DOC on other Forum improvements requested today
- 5) Group brainstorm of potential projects (see notes under Section III.), and application of specific criteria to arrive at consensus on a “short list” of which should be California’s priority projects for funding.

These minutes were drafted by Mary Kay Lahay and reviewed for accuracy by both presenters and the group’s DOC coordinator Sarah Reeves.